Biotech Health Sci. 2014 August; 1(2): e22087.

Published online 2014 August 28.

**Research Article**

# Refractive Errors in School-age Children in Qazvin, Iran

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**Received:** June 10, 2014; **Revised:** March 21, 2014; **Accepted:** May 16, 2014

**Background:** Refractive error remains one of the primary causes of visual impairment among school children all over the world, and its prevalence varies widely.

**Objectives:** The present study was aimed to determine the prevalence of refractive errors in school children aged 7 to 18 years in Qazvin, Iran.

**Patients and Methods:** In this cross-sectional study, 11821 students (aged 7 to 18 years) were recruited from different schools. Emmetropia was defined as refractive status between +0.25 and -0.25 D sphere. A -0.50 D or greater spherical considered as myopia, -6.00 D or more as high myopia, and +0.50 D or more as hyperopia, and a cylinder refraction greater than 0.75 D was defined as astigmatism. Visual acuity and refraction of all students were tested. Anterior and posterior segment examination and ocular motility evaluation were also performed to rule out the pathological causes of visual impairments.

**Results:** The study was performed on 5641 (47.72%) male and 6180 (52.28%) female students. The prevalence of myopia (from 32.96% at the age of 7 to 79.02% at the age of 18 years) significantly increased ($P < 0.001$), and hyperopia significantly decreased (from 47.07% in 7-year- old individuals to 8.32% in 18-year- old subjects) with age ($P < 0.001$). There were significant differences in refractive errors between males and females. Hyperopia and myopia was more common among female in comparison to males ($P < 0.001$). Astigmatism greater than 0.75 D in one or both eyes was found in 990 children (8.37%). Astigmatism increased from 6.04% in 7-year-old students to 9.86% in 15-year-old-students e and then no more difference was found in age group ranged from 15 to 18 years.

**Conclusions:** Based on our study, the prevalence of myopia is more than other types of refractive error, which is similar to that reported in previous studies on other school-age populations in some Asian countries. The high prevalence of refractive error among school-age children indicated that untreated refractive error is one of the most common public health problems.

*Keywords:* Refractive Error; Myopia, Hyperopia; School children; Age; Sex